

ANNOUNCEMENT OF THE REGINA REXX INTERPRETER

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Summary

Regina is a REXX interpreter for Unix systems, written in ANSI C, lex and yacc. The source code for Regina is available by anonymous ftp on Internet. Regina is "free" software, meaning that you don't have to pay for it.

Platforms

Regina has been built on several systems, under the following environments:

- GCC v2.1, flex and bison, on several OS architectures.
- c89 (unbundled) on Decstation 5000, under Ultrix 4.2
- cc on Irix Indigo, under IRIX 4.0
- acc 1.1 (unbundled) on Sun Sparc, under Sunos 4.2
- cc on Decstation 3100, under OSF/1
- c89 on HP 9000, under HP/UX 8.05

The lex and yacc code included in Regina is fairly standard, and can easily be processed by the standard yacc and lex utilities under all the systems named above.

The C code is ANSI C and uses POSIX, when interfacing to the operating system. On several machines where the standard setup of the C compiler is not completely ANSI C and POSIX, you might have to set compiler options to force the compiler to use these standards.

At a few places in the source, where POSIX is not powerful enough, non-POSIX code has been included. Alternative POSIX-compliant source is also present, and may be chosen instead through the setting of C preprocessor flags.

What is Included in Regina

Regina follows the 3.50 version of REXX, as described by the first edition of "The REXX Language" by Mike Cowlshaw. The areas where it is not according to that description are:

- The `SIGNAL ON` command is missing
- Arithmetics are done using C-functions, so anything related to the `NUMERIC` command will not work. In fact, conversion of numbers might even be dependent on the C-compiler you are using. This also effects the results of the `FORMAT()` builtin function.
- There are some problems connected with tracing.
- For (external) commands, there is not a persistent shell in the background to which commands are sent. Instead, a shell is started up each time (`ADDRESS SYSTEM`), or the command is run directly (`ADDRESS PATH` and `ADDRESS COMMAND`).

Other Parts of the Regina Package

Regina comes with more than just the source code for the interpreter itself. A set of documents that describe the functionality of the interpreter, both the standard REXX functionality, and the extra functionality of Regina, in particular the parts interfacing to the Unix system. The documentation is located in the "doc" subdirectory of the Regina distribution.

Also included is a test consisting of a set of REXX programs that check various parts of the REXX language, in particular the more obscure features, border-conditions and limits. Both this "trip-test" and the documentation are under construction, and are far from complete in the current version.

In the "code" subdirectory are various small REXX programs included, that demonstrate features and programming techniques in REXX. I have no intention of writing all these myself. I hope to be able to include small REXX-programs written by other people, in this demo-directory, in order to gather a nice collection of instructive programming pearls.

In the Future ...

I intend to continue developing Regina, improvements and new features include:

- The remaining parts of the 3.50 REXX standard will be implemented. In particular, true string arithmetics will be added.
- The interpreter will be made compatible to the 4.00 version of REXX, as defined in the second edition of "The REXX Language".
- A mechanism for dynamically adding external function packages, during execution time. These packages may be written in compiled languages (e.g. C). This will allow Regina to use numerous functions as if they were builtin, without having to link in the code for these functions into the executable of the interpreter at compile time.
- Using this library mechanism, some libraries will be added to Regina, including a wrapper library to curses (for fullscreen manipulation of ASCII graphics), a math library, an interface to Unix system services and an interface to TCP/IP.
- I will port Regina other Unix systems, and to some non-Unix systems, in particular MS-DOS and VAX/VMS. Support for other systems will depend on what access I have to those systems.
- Tools for program development will be added, such as syntax-checking, pretty-printing, crossreferences etc.

Still in Beta Version

Please note that Regina is still in beta-version. The code will be released as version 1.00 when full REXX 4.00 functionality has been implemented, and most of the known bugs have been removed.

Where to Get Regina

If you have access to anonymous ftp on Internet, you can get it from the server:

flipper.pvv.unit.no (129.241.36.200)

Use ftp to log in to the account "ftp", and use you electronic mail address as password (that is the normal etiquette of the Net.) If you do not have access to the anonymous ftp service, you will have to get Regina from another source. Hopefully other people will redistribute the code to places to which you have access.

Note that flipper is located in Norway, so if you are located outside Europe and can get the Regina from a site closer to you, please try to do so.

Copyright and Distribution

As long as the code is released as beta-version, the copyright for the interpreter generally says: "You can use it for whatever you want, as long as you don't use it for commercial purposes.". More details on these is included in the "README" file that accompanies the source distribution.

When Regina is released as version 1.00, it will most likely have the copyright notice generally known as the "Gnu General Public License" (GPL). It (generally) says: "You can (re)distribute the program as you wish, including selling it, but you have to provide the full source for it when you distribute it. Including the source for any modifications you might have done to the program." More information about this is available in files contained in the distribution.

Bugreports

If you use Regina, and you find a bug in it, I would be very glad to hear about it. Although I do not guarantee that I will fix anything that is broken (after all it is free software), I generally fix anything that I too consider broken, and which is within my capacity to fix.

The interpreter in its current version has bugs and missing features, some of them are listed in the accompanying documentation. If you report a bug, the easiest method (at least for me) is to use electronic mail with a description of the bug. Preferably, such a bugreport should contain:

- Description of what equipment you used, i.e. hardware-platform, operating system, compiler version, compiler options used, version of Regina etc.
- A description of the buggy behavior that you saw (and the behavior that you expected to see.)
- Preferably a piece of REXX code that demonstrates the behavior, it should be as small as possible, preferably not more than about 10 lines.
- If you have already fixed the bug, please append a context diff of the changes you made to the source, then I won't need to redo the same work to track down the bug.

Please make sure that the bug is really a bug in the interpreter, not a bug in your program or a peculiar behavior of your machine. If possible, run your program on other REXX interpreters to see how they behave, and check with a REXX manual if you have access to one.

Where to Send Electronic Mail

If you have questions concerning Regina, feel free to contact me at my electronic mail address listed below. I will gladly accept comments, bugreports, wishes or cries for help. But since I do this on my spare time, and since I don't charge any money for it, I can't guarantee bugfixes and help in advance.

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